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ABSTRACT

This is the final report to be issued with a 1956 grant to the City Colleges of Chicago for the development of instructional television. The 18 years of the TV College's operation are covered under the following topics: (1) Making the Walls Fall, (2) The Overall View, (3) Education Continuing--and Available, (4) Students and Teachers, (5) Getting Courses on Camera, (6) Extending the Classroom Even Further, and (7) A Final Word. A summary of third-year comparisons and resume of courses presented are provided in appendices. (KM)

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Chicago's TV College

A FIFTH REPORT

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FOREWORD

The Ford Foundation grant that brought TV College to Chicago in 1956 contained a sum earmarked for the publication of periodic progress reports. Four such studies have been published, the latest in 1964.

The present report will be the last to be issued with the original grant money. It was scheduled to appear in 1970. But for a variety of reasons it did not.

The delay, however, has proved a lucky circumstance. Since 1970, word of "open" learning systems, alternate routes to higher education, universities without walls—call them what you will—has reached the general public and the Legislatures. Much of this interest is the direct result of the dramatic success of England's Open University. Much of the open learning being planned for the U.S. will make use of the electronic media—radio, TV, the computer. Perhaps this summary of almost eighteen years' experience with a television-based learning system will be instructive.

Since 1956, so many people have contributed to the TV College story—and thereby to this report—that several pages would be needed to list them all. But it would be an act of ingratitude not to list some of them. First, the authors must thank Chancellor Oscar E. Shabat for his unflagging support. As educational budgets have become leaner and leaner, and the costs of operating a seven-campus community college higher and higher, he has continued year after year to reaffirm his faith in TV College and its potential for service—in the way that counts—by recommending to the Board of Trustees of the City Colleges of Chicago that it give TV College financial support.

The efforts and unfailing loyalty of the small Learning Resources Laboratory-TV College staff must also be noted. Lloyd West, Dean of Operations and Planning, brings years of experience in commercial theater, radio, and television which have proved of great value. Robert Carolan, TV College's first producer, continues to turn classroom teachers into television performers.

Finally, special thanks go to Mrs. Margaret Cowhey, who besides handling a multitude of secretarial chores quietly and efficiently in the course of an ordinary workday, has patiently and painstakingly typed and retyped drafts of this report.

J. J. Z.
H. M. C.

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AFTER EIGHTEEN YEARS AND THEN SOME

Everyone and every institution engaged in a new educational approach feels the missionary urge to spread the good news. This urge is particularly strong in educators employing television and the electronic technologies in instructional programs. The fact of the matter is that instructional television has somehow survived the rash promises of the glib promoters and the multi-media hucksters. It is now clear that "television works as an educational tool" —to borrow the words of the authors of *Learning by Television*, the influential 1966 report on the status of instructional television of the Fund for the Advancement of Education. A *Time* education w..er overstated only slightly when he wrote several years ago: "Today more and more colleges are finding out that not only is a taped professor as informative as a live one, but he seldom turns sour and never grows weary of talking." To forestall suspicion that he is damning with faint praise, the *Time* writer concludes by asserting: "despite . . . resistance, proof of television's viability shows up in almost every study of its effectiveness" (October 20, 1967).

Instructional television has followed a curve downward from enthusiastic acceptance and support in many quarters in the 1950's to the malaise that settled in during the 1960's. An upward swing has begun again within the last few years, accelerated in part by the inauguration of England's celebrated Open University. In addition, the recommendations of several influential studies of higher education, commissioned by both governmental and private agencies, have stimulated demands throughout the country for unconventional programs to serve both the adult denied higher education in his youth and the college-aged student impatient with the lockstep of traditional college study. Series like *Sesame Street*, *The Electric Company*, and *Civilization* have proved that television is indeed capable of presenting a new kind of instruction to mass audiences—instruction effective in new ways. Suddenly, higher education planners have become aware that the climate of opinion is right, and that the technology is at hand to bring external degree and continuing education programs into the home as well as into off-campus centers.

Over the past dozen years, Chicago's TV College has shared its experiences in several published reports. Early interim reports, *Final Report of a Three Year Experiment* and *Chicago's TV College*, summarized TV College activities from 1956 through 1959. The former, which is no longer in print, was aimed primarily at researchers and specialists, and presented detailed statistical analyses of the performance of students taking courses on open-circuit television (see Appendix A).

During the first year of the three-year experiment, research efforts were directed toward comparing the achievement of junior college students viewing TV and studying at home with that of students taking the same courses in college classrooms. The performance of students watching TV lessons on campus and receiving conventional follow-up instruction in the classroom was also studied.

During the second year, carefully controlled studies were conducted of the performances of the TV at-home student and the evening student of comparable age and motivation taking the same courses in the conventional classroom. To bring the teacher "variable" under control, a TV teacher taught the on-campus group taking the course he had offered on television. Third-year experimental activities centered around the use of TV series for direct instruction of unselected junior college students of normal college age. Comparisons were made between "TV-in-class" groups and conventionally taught groups.

The authors of the *Final Report* reached the following general conclusion:

> When evaluated by the techniques of measurement and analysis used in this experiment, television instruction is a thoroughly effective means of extending college opportunities to at-home students in all subject areas explored in the project (p. 66).

Among the more specific conclusions of interest to readers of this report were the following: 1) the at-home TV student, who is typically a highly motivated, mature adult, tends to outperform his counterpart in age and ability taking evening courses on campus; 2) the unselected student of normal college age watching a TV course in the classroom will not perform satisfactorily unless he is supplied follow-up classroom instruction on a regular basis.

A later report, *Eight Years of TV College: A Fourth Report*, surveyed activities up through 1964. Written for a general reader and the governmental or educational administrator interested in the instructional potential of television on and off campus, it was widely read and attracted favorable notice in the professional journals.

The purpose of this report—*TV College: A Fifth Report*—is to bring the story up to date for the information of readers working in instructional television, as well as of readers who have no professional interest in education or broadcasting. After eighteen years, we have an additional—and more important—purpose, namely, charting a new course of action. Above all, we have hopes of making television more than icing on the educational cake. Indeed, it is not unlikely that without imaginative efforts to integrate it into a total instructional system, instructional television may become even more marginal to higher education that it has been.

Eight Years of TV College: A Fourth Report was organized around answers to the questions commonly asked about the TV College program—e.g., what kinds of courses are offered? how are television teachers recruited? how do the students perform? how large are enrollments? how much does it all cost? If the same questions were to be raised again in this report, some of the answers would sound familiar to readers of the earlier publication. Experience since 1964 has tended, on the whole, to repeat that of the previous years. Therefore, this report has been organized in a different way, although readers totally unacquainted with TV College and the uses of instructional television (ITV) in higher education will still find answers to most of their questions.

An important UNESCO study, *The New Media: Memo to Educational Planners* (1967), was organized around the five educational needs that can be served by ITV. Although the compilers of this publication were concerned primarily with attacking urgent educational programs in the world's developing nations, the needs they identified are ones demanding careful attention in the developed nations as well. They are as follows:

1. *the need for improving instruction in the classroom;*
2. *the need to teach those who are and will be teachers of the young and old;*
3. *the need to increase and spread literacy and the skills of living in an urban technological society;*
4. *the need to provide continuing education for adults;*
5. *the need to provide extramural extensions of the school and college.*

Since its beginning, TV College has been greatly concerned with all but one of these needs—though each of them has not been

served equally well. As yet, unfortunately, it has done little to offer training in literacy and the skills of urban living. As for this one need not being served at present, this report will indicate how TV College hopes to reach out to those for whom formal adult or higher education is of little concern.

Readers of the *Fourth Report* may remember that we were brash enough to set down therein our plans for the years immediately ahead. That future is now the past. Perhaps this report will show that some progress has been made toward meeting the charges we laid on ourselves in 1964. But we are quick to admit that while expectation was high, achievement has been modest.

Much of what we projected still remains to be done. A part of this report, too, will describe how to do what must be done. TV College is merging its identity with that of a larger instructional unit known by the somewhat resounding title of Learning Resources Laboratory of the City Colleges of Chicago. The Learning Resources Laboratory (LRL), when fully developed, will provide a full range of innovative instructional services, delivered in both conventional and unconventional ways, that will be of value to the student.

What more fitting way could there be to round out this introduction than with a statement from Marshall McLuhan, whose pronouncements inspire either annoyance or awe? If nothing else, he has been the flamboyant publicist of the profound revolution wrought by the electronic media. In his *Understanding Media* he writes:

> Whether there will be TV in every classroom is a small matter. The revolution has already taken place at home. TV has changed our lives and our mental processes. It has created a taste for all experience in depth that affects language teaching as much as car styles. Since TV, nobody is happy with mere book knowledge of French or English poetry. The unanimous cry is, "Let's *talk* French," and "Let the bard be heard."

Implied in this statement is a challenge for all engaged in instructional television—the challenge of allowing a medium whose multisensory impact can be overwhelming to reshape instruction.

MAKING THE WALLS FALL

An Experiment That Worked

Stories of adults who complete all, or part, of their first two years of college by watching television in their homes are nothing new in Chicago. What started in September, 1956, as a bold new departure in extending educational opportunity—a three-year project underwritten in part by the Fund for the Advancement of Education of the Ford Foundation—has long since blended into the educational landscape of the Chicago metropolitan area. In the words of an earlier TV College report, the trial years from 1956 to 1961 "showed that a junior college program can be offered effectively on open-circuit TV"—and without any sacrifice of instructional quality. Accrediting agencies, professional associations, colleges and universities throughout the Midwest accept credit earned through TV College without question.

It also quickly became apparent that the Chicago area, served by educational VHF and UHF sister channels, contains a virtually inex-

haustible audience of mature, highly motivated people capable of completing college courses by studying on their own. Once the Ford Foundation grant had been exhausted in 1960, the General Superintendent of Chicago's Public Schools, who was the *ex officio* chief administrator of Chicago's junior college system, recommended that the instructional television program be continued and supported in its entirety by taxpayers' funds. Since 1966, when the City Colleges of Chicago, of which TV College is an extension, came under the control of its own Board of Trustees—which appointed a Chancellor as the College's chief executive officer—the instructional television service has received only the warmest support from the central administration.

TV College regularly polls viewers' opinions of its instructional service. An overwhelming majority report that they find their TV courses challenging and, even more important, that they enjoy studying by TV. The results of one questionnaire distributed to TV College students who had moved on to on-campus study in four-year colleges deserve special mention. Most of the three hundred respondents stated that they learned just as much by TV as they did in the conventional classroom. They reported also that the grades they made in their conventional courses in four-year colleges were about the same as their TV grades. Further—and this is not surprising, since TV College courses are produced for open-circuit broadcast—they all judged their television courses to be better organized and more effectively presented than the conventionally taught courses they had taken in the colleges to which they transferred.

In short, there is no longer any need to defend television as an instructional medium in the public community college system of Chicago. Although only modestly financed—and seldom enjoying elaborate production or extensive research support—TV College has remained in the vanguard of instructional television in this country. Fred Hechinger, former Education Editor of the *New York Times*, singled out TV College as the most consistently successful of all U. S. colleges employing TV instruction. Murphy and Gross in their *Learning by Television*, the already cited report on U. S. instructional television published under Ford Foundation auspices, labeled the TV College achievement a "highly successful experiment." This same report found little else to praise.

All this is not offered boastfully. Rather, it is meant to suggest that conditions have been right for the achievement of a primary, if limited, goal: namely, enabling residents of the Chicago area within the broadcast range of the local public television station to complete junior college courses by watching television in their homes. A writer in an English educational journal put it well: "It (TV College) doesn't go in for prestige, but for quiet, solid usefulness."

TV College teachers, drawn for the most part from the seven colleges of the City Colleges of Chicago, have proved to be enthusiastic, adaptable, and resourceful. Home-viewing students are highly motivated and self-reliant. A small but dedicated staff of producers and graphic artists, working on a modest budget, add functional, unobtrusive production support. Above all, the Chancellor of the City Colleges of Chicago and his staff provide the kind of whole-hearted administrative support absolutely essential to the success of an innovative program.

With the uncertain trial years well behind us, the time is ripe for another summing up—a critical summing up, if only to avoid the temptation of settling for readily achievable goals, when we should be seeking out new ones.

In short, TV College is looking for ways to serve the Chicago community still more. In 1969, a *London Times* reporter, reviewing uses of television by U. S. higher education institutions, arrived at the following conclusions:

> For America television has so far provided some important fringe education—by feeding a small number of unlikely people into the college campuses, by providing a satisfying hobby for a number of middle-aged housewives, successful vocational courses (for doctors in Washington, policemen in Boston, nurses in Minneapolis) and

a career for a few.... But by failure of commitment and imagination from the top America's educational needs and television's potential have barely been brought together.

The current rage for external degree programs and "open universities" signals that the time has come for "commitment and imagination."

The report which follows is part roll call of achievement, part admission of failure, part assessment of immediate needs, and, for the most part, a brave look—or squint, at least—into the future.

THE OVERALL VIEW

The first three years proved that in a metropolitan area the size of Chicago, with a potential viewing audience of some six to six-and-a-half million people, there is a virtually inexhaustible audience of mature, able, and highly motivated students eager to enroll as credit students in college-level television courses.

The record speaks for itself:

Over 150,000 individuals enrolled in televised courses, with most taking no more than one course;

Of this total, some 80,000 students enrolled officially in the college for credit;

Another 70,000 students enrolled unofficially as non-credit students;

An average of 10,000 viewers watching every TV College program;

TV College on the air an average of 26 hours weekly;

The student retention (number of students who complete a semester's work) averaging between 70 and 80 percent.

Here are a few other highlights:

About 80 different courses offered for credit, plus a half-dozen courses not for credit; most of the credit courses repeated in subsequent semesters;

Several non-credit series produced with funding from government and private sources, including the recent Man and His Art, *nominated by television critics for a special award for production excellence; A television course in Data Processing used by United States Air Force and Army servicemen in Germany;*

About 400 students awarded the Associate in Arts degree for study entirely by TV;

About 2,200 students graduated from the City Colleges of Chicago with an Associate in Arts degree taking, on the average, one semester of their work by TV;

A sizable proportion of TV College students enrolled in conventional courses on the Colleges' campuses;

Approximately 40 percent of TV students with plans to teach;

TV College production now entirely in color.

Started in 1956 on an experimental basis, financed partly by a $500,000 grant from the Fund for the Advancement of Education paid out over a three-year period, and partly by matching funds from the Chicago Board of Education in 1959, TV College became a regular service of what was then known as the Chicago City Junior College. In 1966, the junior colleges were separated from the city's public schools, since which time TV College has been a service of and has received financial support from the independent City Colleges of Chicago.

Within the past two years, TV College has become a division of the newly established unit called the Learning Resources Laboratory (LRL). This unit, when fully developed, will supply a full range of multi-media non-traditional instructional services to students enrolled on the seven campuses of the City Colleges of Chicago.

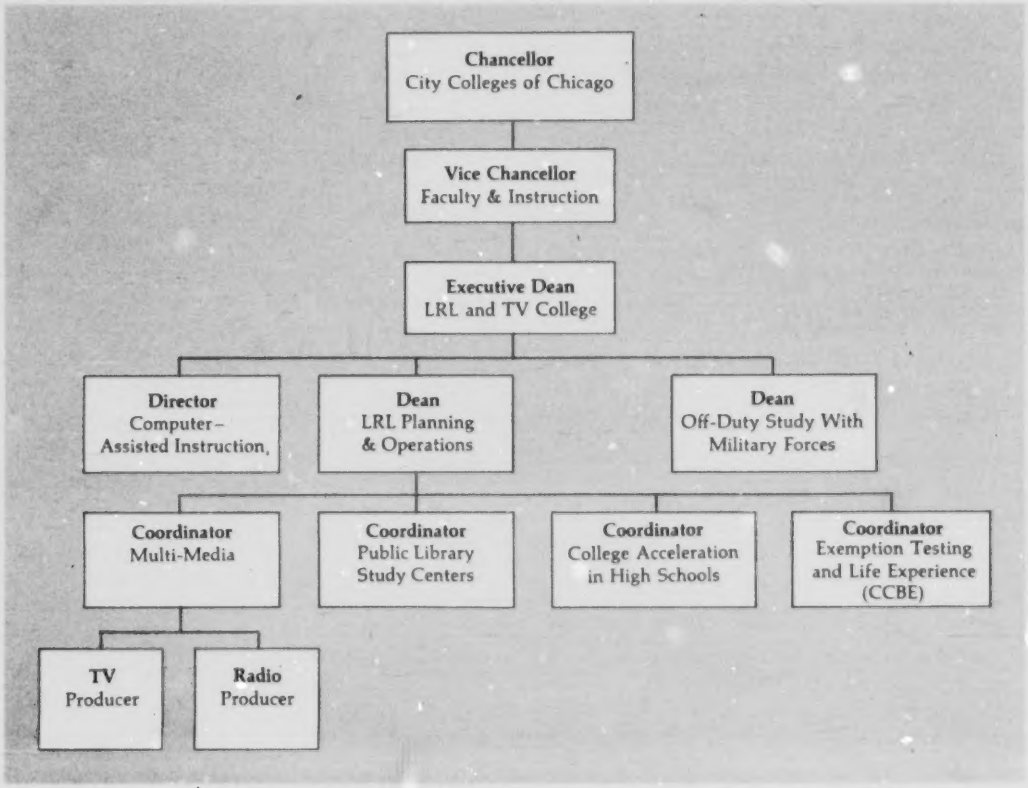
Administering and Putting the Service On the Air

The LRL and TV College are under the immediate direction of an Executive Dean, whose place and responsibilities in the overall administrative scheme are indicated by the organizational chart below:

The LRL maintains its own suite of offices and leases television production facilities from WTTW-Channel 11, Chicago's educational television station. Technical services are leased on an annual contractual basis.

Programing the Service

Until 1973, TV College regularly brought Chicago-area viewers an average of 25 hours of programing during the Fall and Spring semesters, and nine hours during an eight-week summer term. (As many as eight or nine courses have been offered in each of the semesters.) Until 1969, four courses were broad-



cast live and recorded simultaneously each term, while the others were replays of previously broadcast series.

In Fall 1969, live broadcast was discontinued in favor of broadcast of materials videotaped in advance. Instead of presenting four new courses each semester, TV College now records two or three new ones—all in color—in the same amount of studio time allocated for the four live telecasts. Recording in advance has led to greatly improved production quality. Color broadcast attracts a larger general viewing audience not interested in taking courses for credit. (There is no evidence that it improves learning, as learning is measured by the standard instruments.)

In Fall 1969, TV College cut the number of courses offered to seven. One reason for this was the increasing difficulty of coordinating and maintaining conference and examination activities on campuses already overtaxed by a large and still growing student body. Another was a ten percent drop-off in credit enrollments from outside Chicago, as the result of the virtual disappearance of a "tuition chargeback" privilege, whereby a resident of an Illinois school district not maintaining its own public junior college may enroll in another district's college and charge the tuition payment to his local common school district. Every part of Illinois now imposes a real estate tax to support a public community college. Tuition for non-Chicagoans enrolling in TV College now stands at $33.50 per credit hour—which, along with a $10.00 service fee, brings the cost of one three-credit-hour course to about $110.00—beyond what many people are able, or willing, to pay. (Residents of Chicago pay no tuition charges.)

Finally, time on public VHF stations has become a scarce commodity for instructional broadcasters. As a result, the only TV College broadcasts during prime evening viewing hours are carried by UHF Channel 20. The weak signal of this channel not only has caused some drop-off in credit enrollment, but also has discouraged the general non-credit audience.

By Summer 1973, the Channel 20 transmitter had fallen into such a state of disrepair, and its signal had so weakened, that administrators considered it unwise to contract for transmission time. Therefore, during the 1973-1974 school year TV College was without an evening schedule for the first time in its history. A Sunday morning schedule took up some of the slack. But it was hoped that within eighteen months at most a newly equipped and strengthened Channel 20, dedicated to instruction, would be back in operation.

The establishment of the Corporation for Public Broadcasting has not as yet proved a boon for instructional broadcasters looking for open-circuit time. In the past, some officials of the Corporation were dishearteningly frank in expressing their belief that most instructional broadcast should be shunted off to closed-circuit. Recently, however, a shift in White House attitude toward the purpose of Public Broadcasting and the basis on which it is to be funded has been reflected in a changed attitude of Public Broadcasters toward instructional broadcast. In Chicago, there has been discussion of relocating UHF Channel 20's antenna on one of Chicago's tallest buildings and installing an up-to-date transmitter. The Illinois Board of Higher Education has also expressed interest in Channel 20 as a broadcast vehicle for a proposed non-traditional "Open University" to be called Lincoln State University. TV College, it is hoped, would feed students into this system.

The Audience

As already indicated, over the past eighteen years more than 150,000 individuals have enrolled in TV College courses either for credit or not for credit. Surveys indicate that every telecourse is also viewed by a total of about 250,000 "casual" viewers, people who happen upon a program of a course, and feeling their interest piqued, watch several programs—or an entire series—because they find the programs entertaining and informative. The important fact is, however, that every year some 6,000 or so individuals account for about 9,000 course registrations. (Some viewers take more than one course). This is impressive evidence that there exists in the Chicago area a large audience of at-home viewers willing and able

to exert the effort needed to complete college courses for credit.

Residents of the Chicago area give enthusiastic support to the TV College program. They enroll for credit from all over the signal area—some from as far as the sections of Indiana and Wisconsin that touch on the Illinois line. Comments volunteered by TV College "alumni" surveyed in 1972 indicate that they appreciate the benefits of tuning in TV courses on their television sets—and would even welcome a third and fourth year.

TV College is proud to be able to reach out to those for whom the doors to educational opportunity were shut in the past. At the moment, a good deal of national attention is being focused on the great educational needs of inmates of correctional institutions. Occasional newspaper stories and editorials about college officials and state higher education authorities proposing programs for correctional institutions have an ironic ring for City Colleges of Chicago officials. Since 1958, without fanfare or blare of publicity, TV College has brought several thousand prison inmates the first two years of a university without walls, or, more accurately, "within" walls—and without substantive support from state correctional bureaus.

To date, some 4,100 inmates of three correctional institutions have been enrolled in television courses, of whom 300 were graduated with the Associate in Arts degree. While this report was being written, Chicago's newspapers carried stories about an inmate, convicted more than twenty years ago of a particularly heinous crime, who was awarded the Bachelor of Arts degree by a private college located not far from the penitentiary. He became the first person in the State's penal history to have completed a college program while imprisoned. A good part of his work was done in TV College.

TV College is also proud to be serving physically handicapped and hospitalized students, including patients in Veterans Hospitals. In these special programs, proctors administer examinations wherever students are located. Examinations, grading, and course grades are handled by the City Colleges of Chicago staff.

TV College tries to stay alert to new ways of serving special segments of its community.

Several years ago, for example, courses were offered jointly with a local state college that was then a teachers college. The courses provided in-service training for Chicago-area teachers.

A plan to permit academically gifted high school students to enroll in television courses was introduced in 1963. This project attempts, on a city-wide basis, one kind of solution to the problem of presenting intellectual challenge to gifted high school youngsters. Some of them, by combining TV courses with credit earned in college exemption tests, earn up to a year's college credit while still in high school, and could earn the Associate in Arts or Science degree a year after graduation from high school. Rewarding by-products of this experiment are the chance afforded school administrators to explore ways of articulating high school and junior college curricula, and the chance afforded high school students to do independent study as part of their preparation for college work.

Unfortunately, the bureaucratic labyrinth of a large public school system is hard to penetrate, and the active support of public school administrators is hard to enlist. Perhaps the recommendations of the Carnegie Commission's widely discussed *Less Time, More Options* will spark interest in advanced placement for high school seniors presented in a variety of innovative ways.

EDUCATION CONTINUING -AND AVAILABLE

The Broadcast Week

A TV College course usually consists of thirty programs and carries three semester hours of credit. Two lessons are telecast each week over a fifteen-week period, except during eight-week summer terms, when four programs are broadcast each week. Lessons of most series run forty-five minutes. The rest run for thirty.

Since TV College reaches both a daytime audience, made up largely of housewives, and an evening audience, made up of viewers employed during the day, every program is telecast at least twice, during both early and late hours. As indicated earlier, during the 1973-74 school year, unfortunately, the evening telecast schedule had to be suspended. Since two-thirds of the TV College credit audience is able —or willing—to watch in the evening, a reduction in enrollment occurred. This slack is being picked up in part by the "weekend" TV College broadcast on Sunday mornings (and by the Study Unlimited project to be described later in this report.)

In 1972, WTTW-Channel 11 offered TV College a block of Sunday morning broadcast time. The TV College weekend edition starts at about 7:00 A.M. and ends at 1.00 P.M. or 1:30 P.M. Students unable to tune in during the week can complete an entire week's "class work" by watching the two programs of their course in succession. The time span permits the rebroadcast of four courses. Audience response has been enthusiastic.

Whenever possible, TV College also takes

advantage of its weekend schedule to present special features. A fifteen-minute color program reporting happenings on City Colleges of Chicago campuses—*The Open Door*—is sometimes aired. *Project 360°*, an adult basic education and job information series produced in color by the University of Wisconsin with a U. S. Office of Education grant, was presented in Spring 1973; as was a color production of the Maryland Center for Public Broadcasting, *Dialogue of the Western World*, a discussion of selected great books by prominent figures in public life and the arts. *Project 360°* programs were supplemented by spots produced locally.

A word must be said about the length and frequency of telecasts. There is no doubt that two forty-five minute lessons per week—an hour and a half of on-the-air instruction—cover the material of the three fifty-minute conventional class sessions as required in three-credit-hour courses. For that matter, two carefully planned half-hour programs, supplemented by readings, written exercises, and telephone and face-to-face conferences, can more than equal a week's work in an on-campus course. TV College students, as noted earlier, remain unanimous in their belief that open-circuit television instruction is tightly organized and effectively paced, as contrasted with the often digressive and sometimes casual performance of classroom teachers.

It cannot be stressed enough, however, that the telecast is only one part of the student's activity. Much of his time is spent in reading required and suggested texts, as well as in writing the papers or completing the projects that he mails in to a TV instructor or an associate teacher.

Program Variety

As indicated earlier, TV College schedules a range of courses broad enough to attract and hold the attention of an audience with varied interests. At the same time, the schedule includes courses a homeviewer interested in earning the Associate in Arts degree must complete. As many as twenty courses have been telecast within a school year.

Early in TV College history it became clear that a variety of courses must be scheduled if an adequate enrollment is to be maintained. Frequent repetition of the same courses leads to sharp reductions in enrollment as well as to increase in cost. Institutions now making plans for "open universities" that will employ open-circuit television are advised to take this lesson to heart. No matter how large the population served, a year and a half or two years must be allowed to intervene between showings of a course if a steady level of enrollment is to be maintained.

Until recently, what courses were scheduled was predetermined in large part by TV College's original primary objective, namely, enabling a student to complete the entire two-year college program leading to the Associate in Arts (A.A.) degree by combining television viewing and what, in effect, is a form of correspondence study. The general education or liberal studies courses—e.g., Natural Science, Humanities, Social Sciences—required of all students who earn Associate degrees and certificates from the City Colleges of Chicago are regularly rotated, so that a part-time student completing all his courses by TV study can finish the four-semester program leading to the Associate degree within three years or so. Usually, two general education courses are offered each semester of the academic year. But the reader of this report must keep in mind that most students complete only four or five courses on TV. Very few complete an entire two-year program. Most either take courses concurrently on campus or transfer to an on-campus program.

Other TV offerings are "elective," comprised of courses not required of all students seeking Associate degrees. Interestingly enough, the preferences and academic goals of TV College credit students—as made known by their responses to questionnaires as well as by other surveys—have remained fairly constant over the years. Elective courses are regularly scheduled in the clusters that attract sizable enrollments—e.g., mathematics and sciences, business and secretarial skills, general cultural subjects.

Since the early years, 40 percent of TV College credit students have expressed their intention to enter teacher-training curricula.

Accordingly, courses that further their interests are scheduled each year—e.g., introductory courses in Education and Psychology. When they are telecast over the short eight-week summer term, these courses attract many teachers looking for in-service training. A survey conducted during the 1968 Summer Term disclosed, for example, that of the 455 students enrolled for credit in courses in Philosophy of Education and Measurement and Evaluation, 77 had earned bachelor's degrees and 10 master's degrees; 6 held regular public school certificates; 26 held provisional teaching certificates; 47 had taught during the preceding year in Chicago-area public and private schools; 82 had enrolled in one or both summer courses to fulfill requirements for regular public school certification.

In this respect, TV College experience forecast initial Open University experience in England. A sizable portion of the first-year's Open University enrollment was made up of teachers seeking fuller certification, as well as of technicians looking for advanced credentials. It is noteworthy that there is now a surplus of teachers in the Chicago area, a factor to be considered in future programing.

Parts of the TV College audience have definite career and vocational goals. For example, many are eager for the chance to learn business skills or brush up on them. Therefore, courses in Typing, Shorthand, Accounting, Business Law, and Business Organization are scheduled regularly. But there have been some shifts in TV College audience preferences within the past several years. Some of the shifts reflect changing student tastes throughout the nation —for example, the declining interest in foreign language study. At present, the only language course offered by TV College is a Spanish series emphasizing conversational patterns and vocabulary immediately useful to policemen, teachers, and social workers whose work brings them into close contact with Spanish-speaking people on a day-by-day basis.

Strong audience interest persists in cultural subjects. Viewers enroll in large numbers in Art and Music Appreciation, Philosophy, and History. This is not surprising in a major urban area containing many of the kinds of people who display the traits the surveys ascribe to an ETV audience.

In summary, eighteen years of experience and a steady flow of information from student questionnaires remain reliable guides in the selection and scheduling of courses. By not repeating courses at too frequent intervals, TV College administrators have maintained a high level of credit and not-for-credit enrollments.

Appendix B lists credit courses offered by TV College to date. As will be stressed below, however, TV College is now seeking to broaden its goals and cultivate audiences with needs different from those of students seeking the Associate in Arts degree. As a result, the years ahead will see more programing with an unmistakably occupational and community service emphasis.

No Substitute for the Printed Word

Anyone working in instructional television soon learns that a TV program, no matter how well structured or imaginatively produced, cannot carry the entire teaching burden. Printed study aids and supportive face-to-face activities are essential if a high level of student interest is to be maintained and student success insured.

Every TV College student is furnished a Study Guide for each course he is taking. The content and scope vary with the nature of the course, with the format and overall approach reflecting the taste of the television teacher. Every Study Guide, however, lists course and unit objectives in behavioral terms. The title of each program and the required texts are also listed. Mail-in assignments are described in detail, and the student is told how his performance will be evaluated.

Over the years, the TV College staff has also learned that the employment of self-scoring and programed learning materials, based on either linear or branching methods, reduces passivity on the part of the student, and, in fact, increases the percentage of students who complete courses. All television teachers are encouraged to prepare such materials for inclusion in Study Guides or for separate distribution.

Reuses of Courses

A well subscribed course which has proved effective in achieving its objectives may be replayed as often as three or four times over a five or six year period. No course, however, is ever replayed until it has been reviewed and edited by the television teacher or a qualified person he has designated. A teacher will often remake several programs in their entirety—and remake portions of others.

Certain TV College courses are released in videotape or videocassette recordings for use outside Chicago. Since 1966, the Great Plains National Instructional Television Library of the University of Nebraska has handled course rentals and purchases, the understanding being that courses are released only to *bona fide* post-secondary educational institutions. Since 1973, TV College courses have been released directly to members of an Illinois Community College ITV Cooperative.

Interinstitutional use of courses has been painfully slow to catch on despite much talk about it. Over the past five or six years, some twenty institutions and agencies have leased TV College recorded telecourses. Faculty resistance, deeply rooted feelings of institutional autonomy, and the pedestrian production quality of much instructional television are still impeding both interinstitutional use and interinstitutional planning and development.

Non-Credit Offerings

Anyone is invited to enroll in TV College credit courses on a non-credit basis. TV College has produced several courses specifically for the non-credit audience. In 1969, for example, *What Price Tomorrow?*—fifteen programs on the implications of science and technology in the lives of the 20th-century citizen—was presented. Although viewers were asked to participate in scheduled on-campus forums, disappointingly few did.

Audience participation in on-campus activities was much more enthusiastic in *A Stake In Your Future*, fifteen half-hour programs on Real Estate, its purchase and sale, its pitfalls and advantages, and its promise for full and part-time employment. Two hundred members of the viewing audience earned Adult Education Certificates for passing several quizzes and attending several Real Estate forums on campus—no small feat when one remembers that the reward of the credit hour was not present.

Unfortunately, TV College can seldom stretch its regular budget to permit the luxury of non-credit production. On occasion, funds are secured from outside sources, usually state or federal, to underwrite non-credit series. State of Illinois agencies have supplied partial support for several productions. In 1973, *Dollar Power*, a ten-program series in Consumer Economics, was produced with a grant from the Illinois Junior College Board. This funding allowed producers to employ the documentary techniques familiar to TV audiences. An earlier state-funded series—*Start Your Tomorrow Today*—was aimed at high school dropouts and "underemployed" adults in need of vocational guidance. Filmed and videotaped copies of both series are still available free of charge to schools and agencies throughout the State.

Unfortunately, the projected target audience of *Start Your Tomorrow Today*—the dropouts and the many big-city residents desperately in need of job training or re-training—was hardly scratched. A special telephone "hot" line attracted few requests for job information. Even though field workers from municipal agencies distributed circulars describing the series to community and youth centers, not many of the underprivileged, the unemployed, and the unemployable were in the audience.

Two other special features, aimed at audiences that tune in to public television, turned out to be successful in achieving their goals. The twelve programs of *The American Community College*, produced with a U.S. Office of Education grant, described the aims and functions of the most rapidly expanding sector of higher education. The audience aimed at was made up of in-service and prospective community college teachers, as well as citizens with an interest in education. Representative activities were filmed on community college campuses throughout the country. Widely known experts and public figures appeared as

guests. Although *The American Community College* was produced four years ago, and the community college scene changes rapidly, requests are still received for filmed and videotaped copies of programs.

By far, TV College's outstanding production to date is *Man and His Art*, a six-program Art Appreciation series filmed in color in the Art Institute of Chicago. The programs were underwritten by matching grants from the National Endowment for the Humanities and the Field Foundation of Illinois. *Man and His Art*, produced in purely documentary style and featuring treasures from the Chicago galleries, as well as transparencies of masterpieces from the collections of great U.S. and European museums, received nominations in several categories for awards by the Chicago Chapter of the Academy of Television Arts and Sciences. It is distributed to public television stations by the Central Educational Network (CEN).

STUDENTS AND TEACHERS

Students and What They are Like

What is the TV College student like? Or, since new kinds of students are now being recruited, what has he been like thus far? What happens to him when his TV courses are behind him?

For recordkeeping purposes, students are classified as follows: a) Homeviewers; b) TV Concurrent students; c) TV-in-class students; d) Not-for-credit students; e) Casual viewers.

Homeviewers are credit students who watch classes at home or anywhere off campus—in library or community centers, for example. They do not have regular contact with campus activities. They make up 70 to 75 percent of the total credit enrollment.

TV Concurrent students take conventional courses in classrooms while they are enrolled in TV College courses. Many watch telecasts in their homes, some view in campus screening areas, and others watch videocassettes in Chicago Public Library study centers as part of a project to be described later in this report. City College campuses now store videocassette recordings of programs that concurrent students —as well as homeviewers who come to a campus for the purpose—can play at their convenience. "Concurrents" make up 20 to 25 percent of the total enrollment every term.

TV-in-class viewers are college-aged students who view telecasts in groups in the classroom. In the past, they watched courses on open broadcast. Nowadays they are more likely to watch closed-circuit broadcasts of programs. These students meet with classroom teachers—who may or may not be their television teachers—once a week for additional instruction. Unfortunately, two factors have conspired against significant uses of TV in the classroom. Some campuses still lack satisfactory TV viewing facilities. More important, TV College research (see Appendix A for summary of one year's research) has demonstrated conclusively that unselected students taking TV courses in the classroom must have supplemental classroom instruction if they are to match the performance of adult homeviewers. College teachers, unfortunately, resist the tutor's role.

Not-for-credit students do not take examinations, nor do they submit written work. For a nominal fee they are sent course Study Guides. No official records are kept.

Casual Viewers make up the large "invisible" TV College audience—the watchers who happen upon a program as they turn from channel to channel, or learn about a series from a newspaper listing or a TV College Bulletin. Surveys show that as many as 10,000 may watch a single program.

Questionnaires sent to registered non-credit viewers disclose that their level of formal education is much beyond that of the general population. They are a cross-section of the people who, as the studies of Schramm and others have shown, are loyal watchers of Public TV. Many have university degrees. They read books and serious magazines, are actively involved in or concerned with community affairs, and attend concerts and the theater. They send off their checks for memberships in their local public TV stations.

After TV College

Several questionnaires have been sent to TV College "alumni" to collect data as to how many move on to universities, earn university degrees—as well as to gather information about what difficulties, if any, they encounter in the conventional classroom, and about their feelings as to how televised instruction compares with conventional instruction. As cited earlier, a 1972 study of students who had completed the equivalent of a year's college work in TV College after 1960 revealed that some now hold graduate degrees. What is most heartening is that almost every respondent indicated that without TV College he or she would not have had a chance for education beyond high school. Almost everyone stated that—had such an institution existed in Illinois—he or she would have gone on to a full-fledged television "Open University." With few exceptions, they agreed that TV instruction is as effective as classroom instruction.

Students and What They Do

Visitors to TV College are always curious about how activities are planned and controlled for thousands of off-campus students within a seventy-five mile area of Chicago. The present system, it need hardly be noted, emerged only after much trial and error, and is far from foolproof. It is an accommodation to local realities.

First, shortly before each term thirty-five to forty thousand information brochures are mailed out to announce TV College offerings. Listed are the courses to be broadcast, the topic of each program of a series, the textbooks required, the broadcast schedule, and times and places of credit registration. Another 10,000 or so of these information folders are distributed through public libraries, schools, and other public agencies.

Most students enroll in person on the seven campuses of the City Colleges of Chicago. Some are permitted to do so by mail—including the physically handicapped and persons who have already completed several courses on television. When a student registers, he selects one of four centers to which he will report for his examinations, conferences, and whatever other activities are required. These centers are so located that students living in all parts of the city and the suburbs can reach them easily.

Not having its own registration and student activity center poses serious problems for TV College. Registration must be carried on at times determined by host campuses. TV College students must rely upon campus counselors—whose major concern is with the programs of the college to which they are assigned—for guidance and advice. More services could be rendered the off-campus television student if TV College had its own student center, fully staffed and operating around the clock.

Every credit student receives a copy of a TV College *Credit Bulletin* when he enrolls. This lists the dates and times of examinations, the telephone numbers of television teachers and their telephone conference hours, as well as other necessary information—in short, all the information the student must have.

Almost every course requires that the credit student take three written examinations: two while the term is in progress and a final at

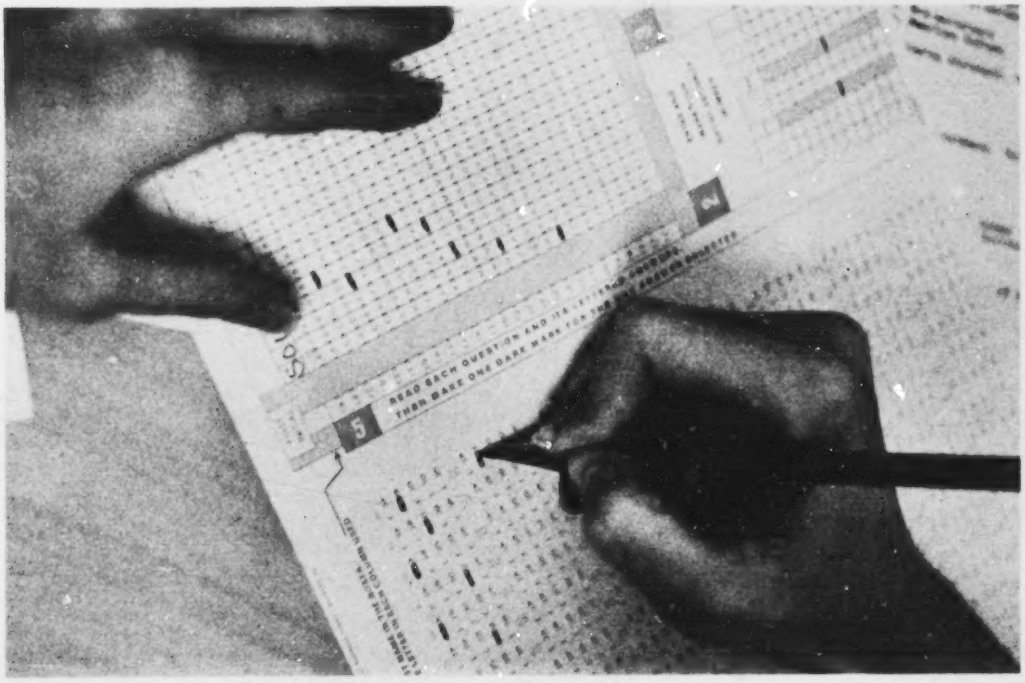
the end. Most examinations are of the multiple-choice kind which can be scored quickly by computer, although on occasion a teacher will assign an essay. Examinations are "item-analyzed," that is, evaluated to determine what proportion of students give correct and incorrect responses to questions. Results of the analysis are furnished TV teachers to encourage them to improve their examinations during subsequent presentations of courses.

Students cannot be kept at electronic arm's length. All TV teachers schedule themselves for two-hour telephone conferences each week, at times of the day when students can reach them for help and advice. Teachers also schedule on-campus conferences several times during the term. Attendance at on-campus conferences is left to the students' option in most courses. But in some courses—foreign language, secretarial courses, etc.—they are required to attend six or seven a semester. Optional conferences are only sparsely attended, which indicates that most homeviewers find the telecasts and printed materials self-sufficient—or, perhaps, that the conferences are not especially helpful.

TV College makes special arrangements for handicapped students. Students confined to their homes or institutions by illness and serious physical handicaps are given their examinations by approved proctors—clergymen, nurses, or social workers. Inmates of the three penal institutions in which TV College enrolls students are administered examinations by members of the prison educational staff.

Student Performance

The TV College staff has conducted intensive research, based on careful experimental controls, which has been reported in detail in several publications, notably in the *Final Report of a Three-Year Experiment* (now out of print). The findings, summarized in the introductory chapter of this report, show clearly that TV College homeviewers tend to surpass the performance of on-campus counterparts comparable in age and ability. As stated earlier, continued investigation has also made it abundantly clear that unselected students of regular college age watching TV courses on



campus cannot match the performance either of at-home viewers or conventional classroom students unless they are supplied supplemental classroom instruction.

The consistently high level of performance of the TV at-home student is not a sign of the superiority of televised instruction. The student is the key. A homeviewing student selected at random would probably be a 30-year-old woman. The chances are good that she is married, with a home and children to look after. Her past school record was good, and she stood in the upper half of her high school class. Since she is tied down by her duties as housewife and mother of small children, she can take only one or two courses at a time. If she did go to college before she married, she finished no more than a year. Now she is intent on making a career for herself outside the home—to achieve personal fulfillment or add to the family income. TV College courses start her on her way. Later on, when circumstances are right, she will transfer her TV credit to another college and enroll in conventional courses.

From the very beginning, about 75 percent of TV College homeviewers have been women. The average age of both males and females has dropped somewhat, from the 33 years of the 1950's and the early 1960's to the present 29 or 30. Their achievement sparks human interest stories in Chicago newspapers every June, when TV College graduates are awarded their diplomas in City Colleges of Chicago commencement ceremonies. Now and then, some appear as guests on *TV College Previews*, programs that acquaint "returning" and prospective TV College students with courses and special series scheduled for the term that is about to begin. Without exception, they are "boosters" of TV College.

Teaching to a Tube

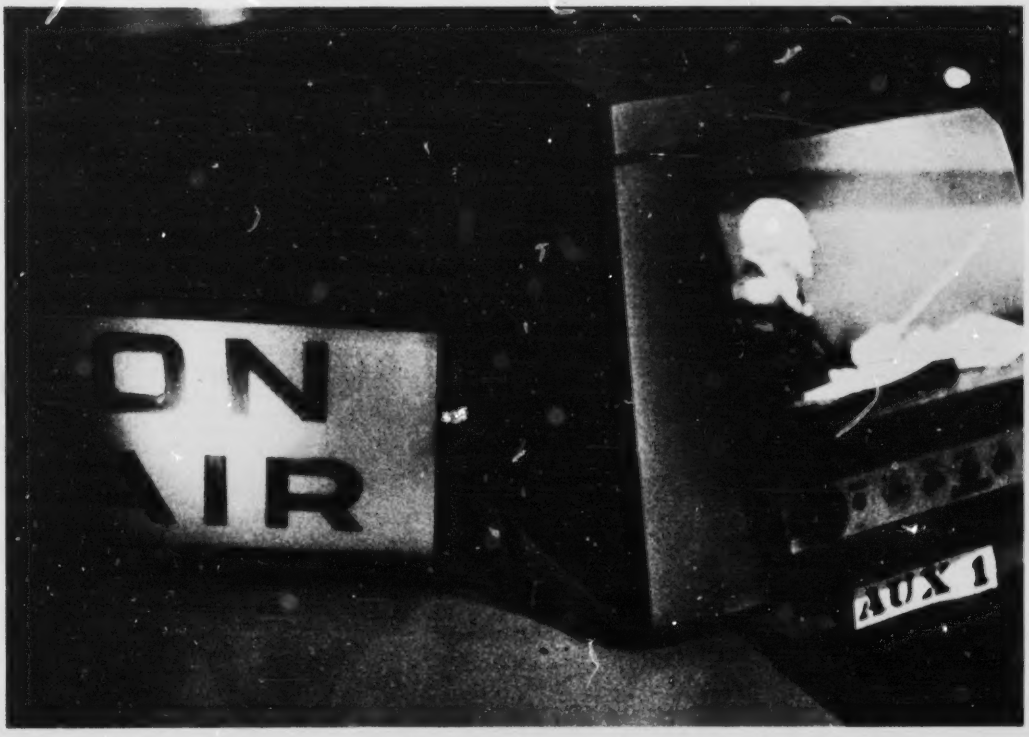
Most teachers come to TV College from classrooms of the City Colleges of Chicago. Perhaps this is a shortcoming of the program. But these teachers do manage to give the instruction an academic flavor, and they present an articulated, coherent curriculum.

On several occasions, specialists from outside the college have been recruited to teach courses—in Astronomy and American History, to cite two examples. The experience has not been an entirely happy one. The only time the use of a teacher from outside was successful was when his own institution had agreed to enroll students in the telecourse on their own campuses.

Thus far, most TV College courses have been essentially studio productions, with a teacher visibly in charge. This is not to say that we are presenting the "talking faces" that have doomed closed-circuit instruction on some university campuses. The TV College graphics section has been enlarged and strengthened. Producers now insist that teachers "show," rather than "tell." Unfortunately, however, the more than one-third of the total TV College budget set aside for production activities allows for very little filming or videotaping of the real world outside the studio. But by carefully husbanding student fees and the funds derived from rentals of recorded series, TV College producers can enliven courses by filming materials on site and introducing other production features. Just about every program of a 1972 series in Child Development, for example, contains segments filmed in schools, homes, child care centers, and city playgrounds. As a result, this series is finding use outside Chicago

The TV College staff must constantly remind itself that fresh, lively materials are produced by other agencies. As this is written, a series in Environmental Studies is in production. Half of the sixty telecasts of this two-term series will be made up of programs of the *Man and Environment* series produced by Miami-Dade Junior College.

An effort must be made to recruit outstanding professional talent wherever and whenever it can be found. Certainly groupings of colleges undertaking the production of courses on a regional or cooperative basis will want to recruit, if possible, scholars and teachers with reputations that reach beyond their home campuses. It is more and more apparent that the future of instructional television at the college level lies in cooperative ventures. The widely publicized State University of Nebraska



(SUN) open learning project is one such activity that holds great promise.

TV College has seldom employed instructional teams to assist a television instructor in preparing his series. One reason for this is the early commitment—in 1956—to producing a telecast that is essentially a visually enhanced, carefully rehearsed classroom performance, an approach dictated—and still dictated—by limited resources and the necessity of presenting a range of courses each year.

The employment of an instructional team also presupposes—if it is to be effective—television producer-members with strong academic credentials and an interest in teaching as well as entertainment. This is a qualification in short supply on this side of the Atlantic. Pushed to the limit, of course, this approach leads to the employment of professional actors or broadcasters, rather than teachers, as course presenters. Desirable though this may be under certain conditions, it lies much beyond the means of a single institution.

TV College still lacks, it need hardly be reasserted, the resources of money and personnel required for thoroughly "mediated" instruction. But even if resources were to become available, there is still the important question as to whether courses designed to impart cognitive learning can be divorced entirely from a teacher "figure." An unexamined premise has taken root in the educational broadcast world and in certain parts of the academic community. It holds that the fast-moving, highly-visual production techniques effective in inducing the non-critical frame of mind that is open to the advertiser's message —and effective in commandeering the attention of the pre-school and juvenile mind—can be adopted wholesale by college and university broadcasters. It is conceivable that close analysis and orderly step-by-step presentation require quiet and unobtrusive production methods—a tailoring of means to ends. The investigation suggested is a task waiting for the researchers.

Visitors to TV College always express surprise at how many instructional series are turned out every year—sometimes as many as five or six thirty-program series within a

school year. As noted several times earlier, if it is to maintain the level of credit enrollment needed to keep televised instructional costs in line with those on campus, TV College must furnish its audience a broad and varied program—which requires a steady stream of new courses. Given the high level of TV College student motivation, and his or her interest in acquiring the credit hour and degree, the present visually reinforced and tightly organized lecture or lecture-demonstration has served TV College well.

The world of instructional television has become a demanding one. The mere act of putting a teacher on camera is no longer something to be marveled at. The TV teacher, guided by professional television personnel, must learn the language of a visual medium. All this takes a special urgency now that TV College is setting out to capture new audiences that do not share the tolerance of the older audience for yesterday's simulated lecture hall performances.

The talent pond in most institutions, especially in community colleges, is restricted. If instructional television is to gain a permanent acceptance, a larger pond must be exploited. Thus far, possibly by careful recruiting and the establishment of favorable working conditions—e.g., adequate time for preparation and studio presentation, a full summer for preliminary preparation and organization of study materials, and a full semester with no duties other than studio recording—TV College has managed to recruit a group of instructors from the City Colleges of Chicago campuses who have learned to teach effectively before the television camera.

GETTING COURSES ON CAMERA

The Matter of Cost

Everyone acquainted with television production knows that it cannot be purchased at cut-rate prices. Sooner or later, all visitors to TV College get to the matter of cost. Their questions are asked in several ways: e.g., How much does a single course cost? How do TV College costs per student compare with on-campus costs per student? What are the categories of cost?

Before overall TV College costs can be discussed meaningfully, the elements entering into calculations must be singled out. They include costs for 1) studio production and transmission as established in an annual contract with the local public television station; 2) teacher, production, administrative and clerical salaries; 3) reference and research activities, graphic work, on-site filming; 4) printing of study guides, promotional materials, and examinations; 5) supportive instructional activities—follow-up classroom instruction, conferences, counseling, etc.; 6) indirect instructional services, such as examination proctoring, special registration activities, et al. Not included are costs for the library, regular registration services, the heating and lighting of classrooms and laboratories

used by TV College students—services available from 8:00 A.M. until 10:00 P.M. on City Colleges campuses whether TV students are present to use them or not.

For the past several years the total annual amount budgeted for TV College activities—exclusive of foundation or federal and state grants earmarked for special projects—has been somewhere between $800,000 and $850,000. Of this total, some $330,000 is earmarked for studio operations, about $275,000 for teacher and indirect instructional salaries, and another $250,000 for staff salaries, videotape and equipment purchase, and overhead expenses.

Producing a thirty-program (45-minute) series currently runs to 60 or 65 thousand dollars, of which $35,000 goes into studio production and the purchase of videotape stock; 16 or 17 thousand dollars, on an average, into teacher's salary; about $7,500 for the services of a producer's assistant, graphic artist, and scene designer; and another $2,500 for administrative and clerical support. Transmission costs for on-the-air broadcast—each program played twice—add up to another $7,000 per series. Added to this are the expenses of printing several thousand course study guides and examinations—another $1,800 to $2,000. Thus the total outlay for production and on-the-air presentation adds up to some $70,000. It must be borne in mind that an effective course in certain areas can be played on open circuit, with only minor editing and updating, as many as four or five times over a six or seven-year span.

A crucial question, however, is the cost of TV College instruction per student credit hour generated. Put more simply, how do TV College costs per credit hour stack up against those of conventional instruction? As this is written, the average cost per-credit-hour of instruction in the City Colleges of Chicago is $50.00. (A full-time student earns fifteen credit hours in a semester.) By scheduling courses that have been played in earlier terms, and by enrolling an average of 275 to 300 credit students in each course, TV College can keep

its per-credit-hour cost between forty-five and fifty dollars. The cost of a per-credit-hour course may range anywhere from ten to eighty or ninety dollars in a term. But by combining newly-produced and already played courses, TV College credit hour costs are kept below or equal to on-campus costs.

Part of a statement regarding cost from the *Fourth Report* of 1964 will serve to bring this section to a close:

> Administrators thinking of introducing open-circuit television must bear in mind that once the cost of TV operation no longer exceeds the cost of conventional instruction, they can begin to serve additional students at only marginal rates. . . . gifted high school students enrolled in TV College are handled at only a slight additional expense. Furthermore, a large not-for-credit audience and an even larger audience of so-called "casual" viewers are served at an unbelievably modest cost. After all, costs are assessed only on the basis of the credit student.

EXTENDING THE CLASSROOM EVEN FURTHER

The Road to be Taken

After eighteen years—a long time in the world of instructional television—TV College has reached a crossroads. Having long since proved that the community college classroom can be opened to the world on open-circuit television, it must now decide whether to carry on down the same road or make a turning in quest of new audiences for whom the walls must be breached in new ways.

Only one decision is possible. As an extension of a public community college required by law to provide a range of post-high school educational services for all citizens, TV College must court broader audiences. The City Colleges of Chicago now award the Associate in Applied Science (A.A.S.) degree—in addition to the older Associate in Arts (A.A.) degree—as well as a variety of shorter-term certificates to students who specialize in technical-occupational areas. All the colleges of the system maintain Adult Basic Education programs. If the TV College program is to reflect the total program of the City Colleges, it must offer courses that appeal to people with interests and goals other than the conventional university ones.

A shift from an almost exclusive emphasis on pre-university and selected business courses has been taking place gradually over the past four years. Not all TV College students want to transfer to universities to earn bachelors' degrees. Some want only to complete courses or short sequences in occupational areas like Data Processing, Office and Secretarial Skills, General Business Skills, Child Care, Law Enforcement, and Management Skills.

TV College has also become increasingly aware of the great need for programs to help the many adults, aged 16 to 80, whose lives are limited because of "undereducation." They lack the communication and computational skills, as well as the general know-how, with-

out which they cannot become productive members of our society or participate fully in democratic group living. If their attention is to be captured and held, the courses designed for them must combine entertainment and instruction in a unique manner.

Early portions of this report mentioned special programing. TV College will continue to seek the extra funds required to produce lively programs and study materials in basic literacy and computational skills, as well as in adult basic education areas that relate to life as it is lived in the big city day by day. Such programing now qualifies for State support on a credit-hour equivalency basis. More of it can be undertaken in the future.

Broadcast modes other than open television will have to be utilized. Some, like CATV and 2500 Megahertz ITFS, seem tantalizingly close at hand. Others—the use of satellite broadcast—seem a little farther down the road, but well within sight.

Community Antenna Television—CATV, as it is commonly known—if administered by municipal authorities in the public interest, holds great promise for TV College. Once franchises have been awarded in Chicago, the narrow audiences for the kinds of vocational and basic educational programing just suggested can be reached economically, provided companies holding franchises are required to dedicate a reasonable proportion of available channels to educational and instructional use, and agree to wire educational users into the system. Audiences interested in a Mid-Management course, for example—or courses in Foremanship, Applied Psychology, etc.—can be reached where they live and where they work by inexpensively produced broadcasts repeated throughout the day. In time, CATV transmission also will allow for "talkback" hookups, an invaluable feature in occupational training series presented via live transmission.

A CATV system should prove a valuable tool for both on- and off-campus instruction. Through CATV, the seven campuses of the City Colleges of Chicago can be linked. The system can also be used for the following services: 1) transmitting administrative and institutional research data; 2) broadcasting, at convenient times, instructional programs produced locally or elsewhere—e.g., TV College materials videotaped originally for open-circuit telecast on the Public Television channel; 3) transmitting instructional materials to campuses and other units on an around-the-clock basis for recording and later replaying in classrooms or student study carrels.

By means of CATV, the City Colleges will be able to expand and diversify off-campus adult and continuing education services by 1) making TV College recorded courses and programs available to more viewers than now can see them on open-circuit broadcast; 2) producing materials for specialized audiences who can watch where they work—e.g., law enforcement officers; municipal, state, and federal employees; management personnel and prospective management personnel; in-service teachers; environmental control employees, health service employees; 3) producing special adult education programs in response to community needs as they arise; 4) producing formal and informal television programs that can be used by viewers to fulfill requirements for the external degrees that, it is hoped, will shortly be available to citizens of Illinois.

As yet, there is much uncertainty as to when CATV will arrive in Chicago. Perhaps TV College should follow the lead of institutions in other parts of the country by employing 2500 Megahertz Instructional Television Fixed Station (ITFS) broadcast to supply programing to special audiences. The more successful of the ITFS educational systems are operated on an interinstitutional basis—Stanford and Golden Gate College, the Texas Consortium (TAGER), to name only two.

Costs of ITFS transmission are modest. A licensee holds four channels and can transmit simultaneously on the four channels to colleges, libraries, hospitals, clinics, fire stations, housing centers for the elderly, industrial and business locations—wherever low-cost parabolic antennas are installed to receive signals within a five-mile radius. Recorded as well as "live" instruction can be presented on ITFS. There is also student "talk-back" capacity by means of telephone or FM radio band.

If it should prove advisable to file an appli-

cation with the FCC to operate a four-channel system, the City Colleges will invite all formal higher education institutions, non-profit instructional agencies, and community service groups within the Chicago area to supply programing on a shared-cost basis. If it does not prove feasible for a college consortium to operate its own ITFS system, perhaps an arrangement can be made to use one or two channels licensed to another agency.

A Broadened Instructional Unit

TV College is the germ of a new and broadened instructional unit. In short, its future lies in becoming more than the first two years of a university on television. Besides offering the conventional college and occupational-vocational curricula described above to people who cannot attend classes on campuses, it must develop into a full-fledged resource center, offering services that enrich and strengthen the day-to-day program of the City Colleges as a whole.

Thus, as indicated earlier, TV College is now part of a developing Learning Resources Laboratory (LRL), a division within which a variety of multi-media instructional activities are carried on. It will become a center where "instructional technology" is coordinated, with this by now shopworn term understood in the sense advocated in the 1970 *Report of the Commission on Instructional Technology to the President*:

> It (instructional technology) is a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication, and employing a combination of human and nonhuman resources to bring about more effective instruction (*To Improve Learning*, U.S. Government Printing Office, Washington, D.C.).

The Report notes that, even though very few institutions have as yet done so, there is reason to believe that instructional strategy based on

> a systematic, comprehensive approach . . . holds the key of the contribution technology can make to the advancement of education.

This last statement poses the challenge the proposed LRL is eager to accept. Officials of the Ford Foundation's Educational Facilities Laboratory, an organization which has encouraged and funded multi-media and instructional technology projects throughout the country, are quick to admit that nowhere has there been achieved a real marriage of the "human and non-human resources" mentioned in the Commission's report. Such a development, combining costly media, sophisticated instructional design activities, and open broadcast production of professional quality, is much beyond the resources of a single college. What is needed is a regional educational technology center at the disposal of all higher education institutions in the Chicago metropolitan area, a center to be tied into a metropolitan cable system—or ITFS systems, when and if such systems develop.

Interinstitutional projects of this kind have long been advocated all over the nation. But times have never been more ripe for their growth, especially in Illinois, which only lately has awakened to the need. A special task force of the Illinois Board of Higher Education has made the following recommendations: 1) that there be established in the state a "non-campus, non-traditional university with six associated centers," and 2) that existing institutions within regions "promote interinstitutional cooperation at the post-secondary level" which will result in developing new educational approaches and furthering the aims of the proposed non-traditional university.

In 1973, the City Colleges of Chicago submitted two successful funding proposals to the Illinois Higher Education Board, both of which had received the prior unqualified endorsement of the Illinois Community College Board. Both call for establishment of a regional educational technology center—a Metropolitan Learning Resources Laboratory—to serve the Chicago area. The activities of the center might be coordinated and managed by a consortium of higher education agencies or by the City Colleges themselves. Open broadcast activities, the proposals suggest, might be carried on by special contract, or other suitable arrangements, with the Chicago Educational Television Asso-

ciation, licensed to operate Public Television Channels 11 and 20. Once its signal has been improved, UHF Channel 20 should be dedicated "exclusively" to educational uses. It would reach out 60 miles or so within the metropolitan area, an area containing more than half the state's total population and some thirty higher education institutions. All broadcast and other activities of the Metropolitan Learning Resources Laboratory—print, computer, or open broadcast—would also be tied into the program of the proposed non-traditional university.

Meeting Needs Old and New

The unit proposed will not devote its efforts to assembling expensive and ingenious gadgets. But the purpose of the Metropolitan Learning Resources Laboratory will be to subordinate means — media — to instructional ends, especially the end of serving the needs of the adult student bodies, on and off campus, within the Chicago area. To repeat the language of the *Report of the President's Commission on Instructional Technology*, "there will be employed a combination of human and non-human resources to bring about more effective instruction."

If this regional planning succeeds, the present TV College service will be reorganized and incorporated into the metropolitan service. As indicated, whatever broadcast modes other than open-circuit television are available will be utilized: CATV, telephone lines or coaxial cable, 2500 Megahertz transmission—whichever prove economically feasible. All or any of the "narrowcast" modes will enable the service to bring instruction to special-interest groups throughout the region, and link City Colleges of Chicago campuses for purposes of information or instructional transmission. How the Metropolitan Learning Resources Laboratory will be managed—by a consortium or by an agency contracting with Board of Higher Education—is a matter to be determined later.

The Metropolitan Learning Resources service will be only as effective as the staff members who develop its "software." One important staff function will be to keep open the line of communication with campus learning resource centers and faculties in the region, so that committed faculty can be identified and attracted to the laboratory. Permanent staff to be recruited—specialists in learning theory, the framing of instructional objectives, evaluation, instructional systems design—will rank as Educational Specialists rather than faculty members, even though teaching experience will be desirable. Only through this kind of arrangement can the administrative staff retain the flexibility of control needed to recruit the best people.

No matter how sophisticated and extensive its equipment or how well qualified its staff, a Learning Resources Laboratory can make a significant impact on an instructional program only if faculty play an active part in planning, are willing to use the facility for instructional innovation, and after having used the facility, return to their campuses agents for change.

What exactly can such a regional facility do for receptive, imaginative teachers? It can train them to

1. *define instructional objectives in clear and measurable terms;*
2. *identify alternative means by which defined objectives can be realized—conventional teaching, machines, "non-human" software;*
3. *distinguish* informing, *or passing on of information, from* teaching *as dialogue, interaction, the supplying of intellectual stimuli, etc.;*
4. *identify means whereby purely "informational" and "teaching" objectives can be realized, while recognizing that all students learn at varying paces and come from widely different backgrounds;*
5. *match student grouping to learning tasks: e.g., one-to-one (student-machine or student-tutor) for one task, large group for another;*
6. *design evaluation techniques so as to measure learning and the effectiveness of learning sub-systems.*

Above all, the proposed unit can help the imaginative teacher employ whatever system —conventional or non-conventional, human or non-human—will most effectively reach the student he is concerned with serving. Thus it is essential that faculty members and/or audiovisual specialists from colleges be encouraged to assist in planning the facility.

In summary, the end product envisioned is a Metropolitan Learning Resources Laboratory where faculty will have at their disposal both the experts (the learning psychologists, communications theorists, audiovisual experts, *et al.*) and the technical and multimedia services (film, television, computer terminals, *etc.*) needed in planning and developing systematic programs of instruction adapted to the needs and capacities of adult students and non-traditional learners. The aim, an ambitious one, has not yet been approximated in American postsecondary education.

The TV College service of the last eighteen years, limited in its objectives by its prime target audience—the well-motivated adult homeviewer—has supplied only a hint of what a "systematic" innovative instructional service aimed at adult student bodies in an urban community can achieve. There are still many groups in need of both traditional and nontraditional educational opportunities. One such group is made up of women. Many more women must be encouraged to become productive members of the work force. Some must be encouraged to return to occupations they left for marriage and family—but to return with upgraded skills. The City Colleges of Chicago's TV College has served thousands of women over the years, helping many find careers in teaching, nursing, and business. But new ways must be found on a region-wide basis to reach women unable to avail themselves of conventional college instructional activities.

Making a New Start

Over the past ten years or so, the City Colleges of Chicago have introduced a host of non-traditional practices, some of them by-products of the TV College service. Among the most exciting is the PLATO IV (Programed Logic Automated Teaching Organization) computer-assisted instructional system developed by the University of Illinois with generous support from the National Science Foundation. A cadre of City Colleges faculty has already been trained by the University to prepare programs for the computer. They are now training colleagues on the campuses of the City Colleges of Chicago.

Terminals already have been connected to study carrels on several campuses. Computerized programs are now available in remedial English and mathematics, accounting, and basic science. Special programs have been prepared for students enrolled in the Chicago Skill Center, a unit of the City Colleges system. Many of these students are preparing for high school equivalency examinations.

At long last—with the help of the computer —progress is being made in tailoring instruction to an individual student's needs and capacities. Moreover, the PLATO IV program is supplying impetus toward achieving mastery learning. No longer is merely passing a course enough. The student must be encouraged to master the content of a course—which he does by using carefully designed computerized and printed programs.

Individualized instruction, however, did not come to the City Colleges with the arrival of PLATO IV. For years, TV College homeviewers have been listening to audiotape or audiocassette recordings of televised lessons in a downtown TV center—at their own convenience. For the past year or so, all City Colleges students have been able to view videocassettes —on their own and at their own convenience —in other centers. These same locations also make a variety of individualized study packages available to all City Colleges students. One college has a dial-access retrieval system that enables a student to call up a film or audio program at any time.

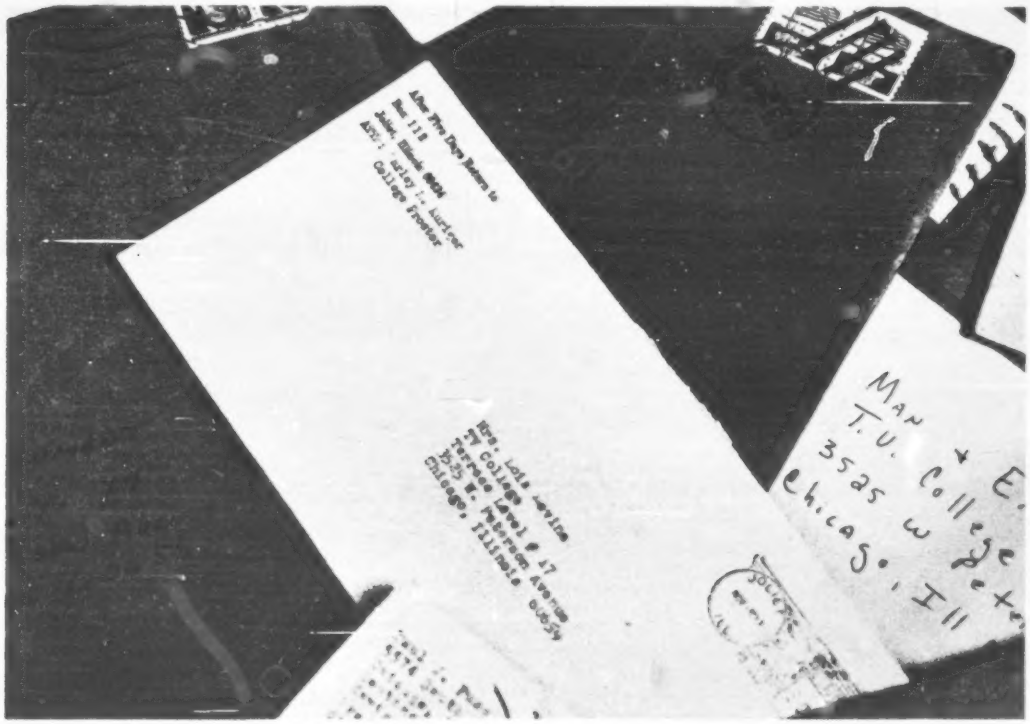
In addition, study centers in several Chicago Public Libraries now store City Colleges-produced study materials, including TV College videocassettes and instructional materials designed for individuals preparing for high school equivalency or college exemption tests. This cooperative project, called *Study Un-*

limited, is funded by a Public Service Grant from the Illinois Community College Board. In the Fall 1973 semester, almost 200 students enrolled for credit in videocassette courses in three Chicago Public Library centers. They are free to work at their own pace. The average age of these students is 39; about 60 percent are women, and 80 percent are employed full time.

If and when a 2500 Megahertz Instructional Television Fixed Station is available, it is hoped that Chicago Public Library centers participating in *Study Unlimited* will be equipped to receive transmission. The Public Library, besides continuing to make space and professional personnel available to the project, plans to purchase substantial amount of print and non-print materials for the project.

In addition to supporting such projects as TV College and PLATO IV, the City Colleges of Chicago has invested considerable sums in faculty development. Faculty in-service courses are being developed. TV College's already mentioned series on the Community College and a course in Instructional Design and Technology offered by a University of Illinois specialist are examples. Creative faculty members have been awarded summer fellowships for innovative course planning and design. Above all, teachers have been, and are, encouraged to develop curricula that meet special needs—e.g., Associate degree programs in Nursing, programs preparing Practical Nurses for entry into training leading to regular nursing certification.

As a result of past experience, more and more attention is being paid the student who is looking for alternate routes to higher education. Several years ago, for example, through an arrangement between the City Colleges of Chicago and the U. S. Air Force in Europe, filmed copies of a televised course in Data Processing were made available to servicemen. This led to the establishment of an overseas off-duty educational project that now enrolls several thousand military personnel and dependents in career programs every school year —and on a financially self-supporting basis.



Short and longer-term certificate programs—conventionally taught, for the most part—are offered in Data Processing, Real Estate, Mid-Management, and Office Skills. The Air Force now plans to use TV College videocassette recordings to bring credit courses to smaller bases with too few personnel to support conventionally taught programs.

The College Credit By Examination Program (C.C.B.E.) is flourishing, with the City Colleges now awarding about 50 percent of all such credit earned throughout the State of Illinois. Students can earn as many as 24 hours of credit in general education—Social Sciences, English Composition, Natural Sciences, and Humanities. Credit is awarded for passing at the 50th percentile level at sophomore norms—well above the 25th percentile level accepted by some colleges in Illinois. To date, over 35,000 credit hours have been earned.

The C.C.B.E. testing program will be expanded shortly to include areas such as Mathematics, Nursing, and Foreign Languages. Within the near future, a broadened exemption testing program will be introduced in Career Education areas. Besides earning exemption credit for passing written examinations, students will be able to qualify for credit on the basis of practical experience.

The C.C.B.E. testing program is also an important part of the College Acceleration Program (C.A.P.), a Learning Resources Laboratory project that brings college courses to gifted high school seniors in their high school classrooms. Over 1400 students enrolled in some twenty-five Chicago high schools are enrolled each semester.

Recently, to insure that the student has every chance to leave the college with a marketable job or career skill, all City Colleges curricula were thoroughly reorganized, and counseling activities modified for the purpose of relating every program to a specific occupation or career. Each program, no matter how long or short, now culminates in a certificate or degree. To reduce student attrition rates and adapt instruction to the individual's capacities, some colleges have even eliminated failing grades, replacing them with a non-punitive grade of "Incomplete." The student is no longer a slave to the calendar, but has a chance to complete a course with more time or to try a course again without prejudice.

Above all, the voice of the student is now listened to. Students evaluate City Colleges of Chicago teachers every semester. Elected student advisory groups meet regularly with college presidents and the Chancellor and his staff to discuss college policies.

The Chicago Skill Center, mentioned earlier, represents another step forward in making the City Colleges a truly "open" community college. Public Assistance and State Employment agencies refer individuals to the Center, where they are taught entry-level job skills. The PLATO IV system and a full range of audio-visual equipment allow them to learn at their own pace. Besides learning job skills which can make them immediately employable, they are also encouraged to prepare themselves for the General Educational Development (G.E.D.) test that leads to the high school equivalency diploma. Thousands of adults who want to become naturalized citizens or learn how to cope with problems of living in a big city also take courses in the Americanization and Urbanization program offered by the Skill Center personnel in many locations throughout the city.

New and efficient ways must also be found to serve adults in the labor market. Along with returning veterans and women, some of these working adults should be awarded "credit" for what they have learned informally, and given an opportunity of gaining access, on an equal footing, to higher educational opportunity.

One other pressing problem must be attacked by the Learning Resources Laboratory of which TV College is now a part. Thorough overhaul of the City Colleges general education curricula is long overdue. The goal is a general education program that will allow all students to share a set of common experiences related to everyday living, and at the same time allow for the development of optional self-contained learning modules adapted to the special interests of each student. Only in this way can the undoubted value of general education be reestablished.

A FINAL WORD

It is paradoxical that its continuing success should have become a source of dissatisfaction to an instructional service. But, as the foregoing has made clear, this is the case with TV College. It might go on serving the same clientele it has served so long. By doing so, however, it would not reflect the broad goals of the urban community college of which it is a most important arm.

The TV College staff has long known that instruction aimed at the unconventional learner must be systematized and made up of varying and complementary components. The future of TV College lies in becoming part of a larger whole—or instructional technology system—which will supply systematic, innovative instruction for all kinds of learners, on and off campus.

There will always be many who are eager to enroll in courses in Psychology and the History of Western Culture. TV College hopes to serve them as well in the future as it has in the past. But it also is determined to serve the thousands of the poorly motivated whose educational needs are much more basic.

It is also hoped that the TV College productions that come from the Learning Resources Laboratory—whether the latter be a regional service cooperatively managed or a service of the City Colleges of Chicago—will display a higher level of professional polish than in the past. Yet there is no reason to believe, despite the much-heralded *Sesame Street* experience, that a teacher-figure or teacher "presence" can be dispensed with. It is questionable that lasting learning in the cognitive domain results from a stringing together of fast-moving sequences "a la Sesame Street," even though the affective force of the well produced television commercial on all viewers can hardly be gainsaid. The principle guiding TV College producers will continue to be that of combining profit—i.e., instruction—with pleasure. Guiding them too will be the awareness that there must be an economy of means in instruction, lest the mountains labor to produce a mouse. It is unlikely that the word, printed or spoken, will become obsolete.

To insure that it will persist as a vital force, TV College has been reorganized and placed in a larger setting. It is ready to take out a new lease on community service.

Appendix A*

Summary of Third-Year Comparsions

In the first two years, experimentation showed that TV-at-home groups achieved at least as well as and sometimes significantly better than conventionally taught classroom groups. This was true even when the groups were equated as much as possible in age and initial ability and when adjustments were made for inequalities in initial ability. In the third year, experimentation again showed TV-at-home groups achieving as well as or better than conventional classroom groups. (In Psychology 207, Speech 141, and Mathematics 103, TV-at-home groups were favored over control groups at the 5%, 1%, and 1% levels respectively.) However, other experimentation showed that TV-in-class groups sometimes achieved as well as conventional groups but not always. In Social Science 102, Humanities 201, and Speech 141, TV-in-class and conventional day groups did not differ significantly in achievement, but in Physical Science 101 and Humanities 202, conventional classes were favored over TV-in-class at the 5% and 1% levels respectively.

When one attempts to evaluate through these findings the single variable of television vs. conventional instruction, one discovers that apparently television is sometimes superior to, sometimes equal to, and sometimes inferior to conventional instruction (sometimes superior for the at-home group and sometimes inferior for the in-class group). How can these apparent variations in the results be explained?

One of the problems involved in comparing different methods of instruction lies in isolating the method variable in a complete definition of a teaching-learning situation. Very often the situation is labeled by a general method term, such as lecture or discussion. But such a term refers very loosely to only one variable in a very complex teaching-learning situation having many interacting variables, some of them more important than the method variable. The differences between the variables within a single teaching-learning situation labeled as representing a given method may be greater than the differences between variables from two situations representing different methods. Therefore, if the method of instruction is to be evaluated, the definition of the teaching-learning situation must identify each variable and indicate precisely the similarities and the differences between the situations being compared.

Criteria such as the following can serve as a frame of reference for a more accurate definition of a teaching-learning situation: the degree and type of student motivation, the number of opportunities for problem solving, the amount of practice in use of the new learning, the amount of participation in group discussion, the amount of private or semi-private consultation with the teacher, the variety of learning experiences, the organization of learning experiences, the training and previous experience of the instructor, and the age, ability, interests, etc., of the student population.

This kind of analysis was used by the Social Science faculty of the Wright Branch when it participated in the Cooperative Study of Evaluation in General Education sponsored by the American Council on Education. This faculty made a comparison of student growth in critical thinking in Social Science 101-102 for lecture and discussion methods of instruction. During the first year of the project, nonsignificant gains between the pre- and post-test of critical thinking were found in both the lecture and discussion methods. In the following years, a set of criteria for defining learning situations was developed, and it was possible to identify several types of teaching-learning situations. The final comparisons showed differences with a significance beyond the 1% level among these classroom situations. The differences were found within each "method" of instruction and between lecture and discussion methods and were shown to be related to the degree of application of the above criteria to the classroom learning situation. In effect, there were more differences within a method than between methods of instruction.

If this method of analysis could be used in comparisons of television and conventional instruction, it might be possible to discover a hypothesis which would explain the apparent variations in the results of the comparisons in the three-year experiment.

In spite of these apparent variations, a basic conclusion seems fully warranted by the results of the three-year experiment:

"When evaluated by the techniques of measurement and analysis used in the experiment, television instruction is a thoroughly effective means of extending college opportunities to at-home students in all the subject areas explored in the experiment."

*From *Chicago's TV College, Final Report of a Three-Year Experiment*, pp. 63-66.

Summary of Achievement Comparisons by Subject for the Third Year, 1958-59

	Data					
GROUP	**N**	**OTIS***	**Subject Pre-test**	**Final Means**	**Adjusted Final Means**	**Significance**
Social Science 102:						
TV-at-home	29	54.45	—	132.52	129.13	F: Significant @ 1% level
TV-in-class (Random day)	29	52.07	—	113.90	113.01	TV-at-home vs. TV-in-class-significant @ 1% level, favoring TV-at-home
Control (Random day)	29	47.14	—	116.72	121.00	No other significant differences
Physical Science 101:						
(TV-at-home	36	56.78	22.44	225.42	212.41	F: Significant @ 1% level
(TV-in-class						Wright control vs. TV-significant @ 5% level, favoring control
Wright (Random day)	29	47.90	21.00	208.00	215.01	
(Control (Random day)	30	55.00	21.10	237.20	230.85	
Wilson (TV-in-class (day)	33	48.00	19.88	177.55	188.47	No other significant differences
(Control (day)	44	50.73	21.61	184.16	185.29	
Humanities 201:					Matched	
TV-in-class (day)	31	51.2	27.6	176.16	Group	No significant differences
Control (day)	44	49.3	28.8	181.11	Analysis	
Humanities 202:						
TV-in-class (day)	20	60.35	—	152.85	152.01	Significant @ 1% level, favoring control
Control (day)	31	58.52	—	175.68	176.21	
Psychology 207:						
TV-at-home	60	56.32	30.27	187.27	185.53	F: Significant @ 5% level
(day	30	54.30	30.23	178.83	178.80	TV vs. Eve control & Combined controls-significant @ 1% level, favoring TV
Controls (eve	21	52.76	28.43	164.48	169.33	
(combined	51	53.66	29.49	172.92	175.00	Day controls vs. Evening controls-significant @ 5% level, favoring day controls
Mathematics 103:						
TV-at-home	35	55.20	—	140.23	—	Significant @ 1% level, favoring TV
Control (eve)	30	57.97	—	122.67	—	
Speech 141:						
TV-at-home	17	53.41	20.88	122.35	118.34	F: Significant @ 1% level
TV-in-class (Random day)	15	42.93	16.27	104.40	109.65	TV-at-home vs. both controls-significant @ 1% level, favoring TV-at-home
Controls (Random day)	48	50.65	18.50	106.19	106.19	
Controls (eve)	37	50.73	18.89	106.19	105.68	No other significant differences

*Scores on OTIS Test of General Mental Abilities

Appendix B

Resume of Courses Presented

TV College Courses and Semesters Offered		Students Credit	Students Non-Credit
Anthropology 201	Fall 60 (L)	238	342
Art 141	Winter 63 (L)	293	298
*Intro. to the Visual Arts	Winter 65	220	298
	Spring 68	312	353
Astronomy 201	Spring 59 (L)	282	522
	Spring 61 (L)	107	275
	Winter 64	175	223
Biology 101	Fall 56 (L)	628	1178
	Fall 57	221	187
	Fall 59	436	264
	Fall 61	712	995
	Summer 62	174	43
	Fall 63	658	172
	Fall 65	600	98
	Fall 67 (L)	466	119
	Fall 69	300	50
	Fall 71	524	18
Biology 102	Spring 57 (L)	387	330
	Spring 58	196	100
	Spring 60	356	119
	Spring 62 (L)	501	139
	Winter 64	437	98
	Winter 66	393	60
	Spring 68 (L)	268	88
	Spring 70	194	72
	Spring 72	216	37
Biology 111	Fall 67 (L)	157	—
	Fall 69	130	—
	Fall 71	193	—
Biology 112	Spring 68 (L)	105	—
	Spring 70	85	—
	Spring 72	90	—
Business 101	Fall 57 (L)	315	1139
	Spring 61	314	892
	Fall 65	345	284
	Fall 67	270	224
	Fall 71 (PT)	584	51
Business 102	Spring 58 (L)	150	435
Business 111	Spring 69 (L)	253	70
*Introduction to Business	Fall 70	318	73
Business 117	Fall 59 (L)	136	1514
	Spring 62	193	712
	Summer 62	86	194
	Spring 68 (L)	166	318
	Fall 69	87	89
	Fall 72	187	142
Business 120	Fall 57 (L)	288	2278
	Spring 60	116	695
	Winter 64	205	665
	Spring 65	120	497
	Fall 68	195	251
Business 131	Fall 72 (PT)	267	112
Business 121	Spring 58 (L)	107	635
	Spring 60	116	695
Business 211	Spring 59 (L)	210	307
	Fall 61	324	163
	Fall 64	267	206
	Spring 66	217	78
	Summer 68	188	49
	Summer 70	95	55
Business 231	Winter 65 (L)	236	226
	Winter 66	154	365
	Summer 69	54	51
Business 255	Fall 59 (L)	111	289
Business 271	Fall 60 (L)	232	179
	Spring 73 (PT)	253	119
Child Dev. 101	Spring 73 (PT)	458	69
Communications Media 278	Spring 62 (L)	233	289
	Fall 62 (L)	110	71
Data Processing 101	Fall 65 (L)	384	702
	Fall 66	316	305
	Fall 68	366	141
	Fall 71 (PT)	392	41
	Fall 73	229	44

*New Course Titles as of Fall, 1970 PT—Pretaped L—Live

TV College Courses and Semesters Offered		Students Credit	Students Non-Credit
Economics 101			
Economics 201	Spring 68 (L)	400	102
	Fall 69	307	88
	Summer 71	293	49
Economics 233	Winter 63 (L)	206	109
	Winter 64	311	318
Economics 236	Spring 63 (L)	91	55
Education 151	Fall 60 (L)	370	99
	Spring 61	233	104
Educational Psychology 203	Winter 64 (L)	440	152
	Spring 65	236	102
	Spring 67	449	121
	Summer 69	223	39
	Spring 71	505	54
	Summer 73	423	50
Education 250	Fall 63 (L)	135	223
	Spring 65	65	100
Education 256	Spring 63 (L)	226	43
	Winter 65 (L)	199	29
	Spring 66	214	37
	Summer 67	121	50
	Summer 69	258	—
	Spring 72 (PT)	323	48
Education 277	Winter 63 (L)	241	98
	Winter 64	260	105
	Spring 65	176	67
	Summer 67	149	116
	Summer 68	257	21
	Summer 70	291	25
	Fall 72 (PT)	290	66
Education 278	Winter 63 (L)	101	71
	Fall 64	197	101
	Summer 68	198	35
	Summer 70	186	30
Education 280	Spring 61 (L)	263	248
	Fall 61	347	376
	Fall 62	196	77
	Spring 64	193	92
	Fall 65	340	113
English 101	Fall 56 (L)	801	1518
	Spring 57	186	593
	Fall 57 (L)	277	454
	Fall 59	291	434
	Fall 61	707	501
	Fall 63	615	384
	Winter 65	347	245
	Spring 67	393	223
	Spring 69 (L)	335	88
	Spring 73	271	86
English 102	Spring 57 (L)	389	774
	Spring 58	206	130
	Spring 60	231	160
	Spring 62	361	199
	Winter 64 (L)	368	189
	Spring 65	238	146
	Spring 68	250	122
English 105	Fall 58 (L)	194	440
	Spring 59	84	156
	Fall 67 (L)	267	199
	Fall 69	258	46
	Spring 72	286	70
Environmental Studies 101	Fall 73 (PT)	380	29
French 101	Spring 61 (L)	248	1053
	Fall 65	230	687
	Fall 70 (PT)	146	390
Geography 101	Spring 62 (L)	649	338
	Spring 70 (PT)	350	145
	Summer 71	350	54
Geology 201	Winter 65 (L)	158	103
German 101	Fall 60 (L)	231	1420
	Fall 63	201	1309
	Fall 66	163	606
	Fall 69	100	151
History 111	Spring 71 (PT)	563	89
History 112	Spring 61 (L)	615	296
	Spring 62	681	212
	Spring 64	341	96
	Winter 66	464	126
	Spring 68	633	113
History 112 (Cont.)	Spring 72 (PT)	469	86
History 143	Winter 66 (L)	257	236
	Summer 67	176	110
History 145	Fall 67 (L)	316	169
	Summer 69	141	38
Humanities 201	Fall 57 (L)	583	844
	Fall 58	396	321

TV College Courses and Semesters Offered		Students Credit	Students Non-Credit
	Spring 60	319	455
	Spring 62	691	569
	Spring 63	342	228
	Winter 64	521	346
	Winter 66	531	355
	Summer 67	362	124
	Fall 68 (L)	486	141
	Fall 69	426	88
	Fall 71	1011	60
	Fall 73	482	61
Humanities 202	Spring 58 (L)	426	375
	Spring 59	304	253
	Fall 60	391	308
	Fall 62 (L)	687	418
	Spring 64	355	185
	Spring 66	409	179
	Fall 67	561	222
	Spring 69 (L)	266	122
	Spring 70	314	114
	Spring 72	380	101
Humanities 205	Fall 60 (L)	264	397
	Fall 63	485	504
	Spring 65	216	251
Italian 101	Fall 68 (L)	107	239
Law Enforcement 102	Fall 73 (PT)	260	13
Literature 111	Fall 66 (L)	309	185
	Summer 68	173	77
	Summer 70	248	96
	Fall 72	155	97
Literature 112	Spring 67 (L)	265	212
	Spring 69	165	65
Literature 113	Fall 59 (L)	372	428
	Fall 61	388	164
	Spring 68 (L)	362	266
	Summer 69	174	76
	Spring 72	264	78
Literature 116	Winter 65 (L)	383	215
	Summer 67	180	78
	Fall 71 (PT)	558	43
Literature 117	Fall 58 (L)	288	45
	Spring 60	172	25
	Winter 66	307	18
	Fall 68	324	14
	Spring 70 (PT)	193	10
Literature 211	Spring 61 (L)	259	76
	Fall 62	231	17
	Spring 64	153	18
	Spring 66	162	15
	Fall 69 (PT)	238	13
	Summer 71	270	9
Mathematics 101	Spring 57 (L)	233	152
	Fall 57	149	38
	Fall 59	186	36
	Fall 62 (L)	348	34
	Spring 64	198	21
	Winter 66	325	24
	Fall 67	391	22
	Spring 69	330	7
	Summer 70	297	10
	Spring 71 (PT)	397	14
**Mathematics 111	Summer 72	292	10
Mathematics 103	Spring 59 (L)	165	39
	Spring 60	131	30
	Winter 63	252	11
	Fall 64	181	17
	Spring 67	217	11
Mathematics 105	Fall 57 (L)	234	198
	Spring 58	123	57
	Fall 59	121	67
	Fall 61	203	13
	Fall 63	209	45
	Fall 68 (PT)	240	28
	Fall 69	98	9
	Fall 71	208	5
Music 101	Spring 66 (L)	228	224
*Fund. of Mus. Theory	Spring 68	325	166
	Fall 70 (PT)	255	185
	Summer 72	251	131
Music 111	Fall 58 (L)	248	513
*Sight-singing I	Fall 61	459	391
	Spring 64	183	244
Music 121	Fall 60 (L)	174	309
*Intro. to Mus. (form. Music 130)	Fall 67 (L)	247	252
	Spring 69	173	51
	Summer 70	155	92
	Spring 73	178	102
Philosophy 105	Fall 65 (L)	515	338
	Spring 67	379	213
	Spring 69	281	51
	Fall 70	416	105

**New Course Titles as of Fall, 1971 *New Course Titles as of Fall, 1970

TV College Courses and Semesters Offered		Students Credit	Students Non-Credit
Philosophy 215	Fall 59 (L)	372	578
	Summer 61	265	151
	Fall 62 (L)	243	145
	Fall 66	208	176
	Spring 71	165	57
Physical Science 101	Fall 57 (L)	381	343
	Fall 58	408	182
	Fall 60	471	157
	Fall 62 (L)	765	141
	Fall 64	914	132
	Fall 66	606	81
	Fall 68 (L)	342	91
	Fall 70	389	162
	Fall 72	264	61
Physical Science 102	Spring 58 (L)	317	230
	Spring 59	275	209
	Spring 61	419	192
	Winter 63	374	71
	Winter 65	395	128
	Spring 67 (L)	382	76
	Spring 69	210	18
	Spring 70	335	51
	Spring 73	289	29
Physical Science 111	Fall 66	126	—
	Fall 68 (L)	71	—
	Fall 70	104	—
	Fall 72	76	—
Physical Science 112	Spring 67 (L)	54	—
	Spring 69	54	—
	Spring 70	72	—
	Spring 73	51	—
Physics 221	Fall 63 (L)	153	228
	Fall 65	64	95
Political Science 201	Fall 64 (L)	451	158
	Fall 66	327	92
	Summer 67	95	54
	Fall 68	303	94
Political Science 201 (Cont.)	Spring 71 (PT)	334	58
	Summer 72	325	55
Political Science 221	Spring 68	117	135
Political Science 223	Fall 56 (L)	639	1203
	Spring 60	290	183
Psychology 201	Fall 57 (L)	504	789
	Fall 61	676	506
	Summer 62	287	74
	Fall 63	615	369
	Fall 64	580	237
	Spring 66	362	183
	Fall 68 (L)	565	171
	Spring 70	470	192
	Fall 72	619	119
Psychology 207	Fall 58 (L)	532	451
	Spring 59	287	214
	Winter 63	479	128
	Winter 65	440	159
	Fall 66	668	168
	Spring 69	418	100
	Fall 70	541	263
Reading 126	Fall 59 (L)	227	973
	Spring 62	301	605
	Winter 64	265	364
	Spring 67	312	425
	Spring 70	209	242
	Fall 72	189	153
Russian 101	Spring 59 (L)	249	2620
	Fall 59	122	1103
	Fall 62	127	394
Social Science 101	Fall 56 (L)	707	1335
	Spring 58	255	140
	Fall 60	531	170
	Fall 62	850	143
	Fall 65 (L)	953	245
	Fall 66	940	80
	Fall 67	574	108
	Spring 70 (PT)	413	93
	Fall 72	443	77
Social Science 102	Spring 57 (L)	424	339
	Fall 58	357	99
	Spring 61	518	141
	Winter 63 (L)	442	105
	Winter 65	736	102
	Winter 66	593	89
	Spring 67	713	100
	Spring 68	457	65
	Fall 70 (PT)	556	52
	Spring 73	362	58
Sociology 145	Spring 60 (L)	328	306
Sociology 201	Spring 67 (L)	366	83
	Summer 68	340	49

TV College Courses and Semesters Offered		Students Credit	Students Non-Credit
	Summer 69	131	20
	Spring 72 (PT)	633	78
Sociology 202	Spring 73 (PT)	371	64
Spanish 101	Spring 60 (L)	195	1252
	Fall 61	381	437
	Fall 64	305	830
	Fall 67	289	661
	Fall 71	268	88
Spanish 102	Spring 62 (L)	176	509
Speech 101	Fall 63 (L)	603	298
	Fall 64	946	203
	Fall 65	455	198
	Fall 66	409	105
	Fall 68	277	108
Speech 141	Fall 58 (L)	320	465
	Spring 59	94	174
	Summer 61	208	155
Speech 144	Winter 66 (L)	106	148
Adult Education Course *What Price Tomorrow?*	Spring 69 (PT)	112	161
Adult Education Series in Real Estate *A Stake in the Future*	Fall 71 (PT)	190	104
A.O: 637: Great Books *Dialogue Of The Western World*	Spring 73	—	225
Consumer Economics *Dollar Power*	Fall 73 (PT)	—	350

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